

Appl. No. 09/787,902  
Amendment dated: January 5, 2004  
Reply to OA of: September 3, 2003

This listing of claims will replace all prior versions and listings of claims in the application.

**Listing of Claims:**

Claims 1-4(canceled).

5(currently amended). A method of producing hydrogen and carbon in a ~~closed~~ recycling process by pyrolysis of an organic gas utilising carbon dust as a catalyst for precipitation of carbon characterised by stimulating carbon precipitation by guiding the gas through a heated reaction chamber where the carbon molecules from the gas can attach to the catalytic particles causing growth of these to a pre-set size that can be mechanically trapped.

6(previously presented). A method as claimed in claim 5 characterised by crushing a controlled amount of precipitated carbon and returning the crushed carbon to the reaction chamber in a continuous process for maintenance of an optimum balance with regard to the amount and size distribution of carbon particles.

7(currently amended). A method as claimed in claim 5 comprising heating said reaction chamber using excess heat from another ~~high temperature~~ process.

8(previously presented). A method as claimed in claim 5 comprising heating said reaction chamber to a temperature of between 300 and 2000°C.

9(currently amended). A method of pyrolysis of an organic gas comprising passing said gas through a heated reaction chamber containing carbon dust such that carbon from said gas is caused to precipitate onto said carbon dust causing growth of the size of the carbon particles to a trappable size, removing said trappable particles

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from the heated reaction chamber, and returning a portion of said trapped particles after crushing to a fine dust to the heated reaction chamber.

Claims 10-15(canceled).

16(currently amended). A method as claimed in claim 6 comprising heating said reaction chamber using excess heat from another ~~high-temperature~~ process.

Claim 17(canceled).

18(new). A method as claimed in claim 5 wherein the pyrolysis process operates at temperatures down to 400°C.